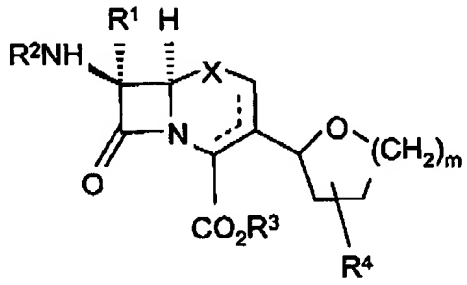
IN THE CLAIMS:

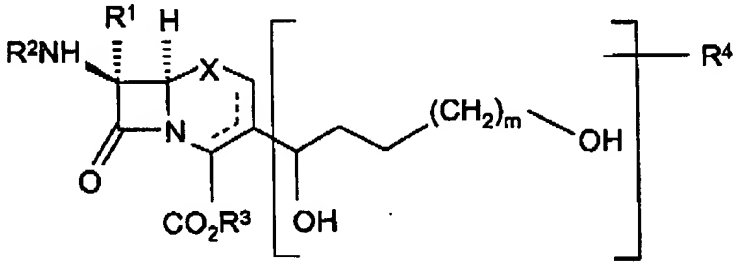
Please amend claims 1, 2, 11 and 21-23 as follows:

1. (Twice Amended) A process for the preparation of a compound of formula (II):



(II)

comprising cyclizing a compound of formula (III):



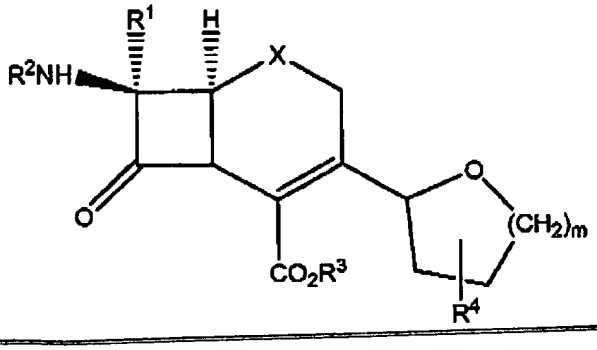
(III)

wherein in formulae (II) and (III), R^1 is hydrogen, methoxy or formamido; R^2 is an acyl group; CO_2R^3 is CO_2H, a carboxylate salt or a carboxy group protected by benzyl, p-methoxybenzyl, benzoylmethyl, p-nitrobenzyl, 4-pyridylmethyl, 2,2,2-trichloroethyl, 2,2,2-tribromoethyl, t-butyl, t-amyl, allyl, diphenylmethyl, triphenylmethyl, adamantyl, 2-benzyloxyphenyl, 4-methylthiophenyl, tetrahydrofur-2-yl, tetrahydropyran-2-yl, pentachlorophenyl, acetonyl, p-toluenesulphonylethyl, methoxymethyl, a silyl, stannyl or phosphorus- containing group, an oxime radical of formula $-N{=}CHR^7$ where R^7 is aryl or heterocyclic, or an *in vivo* hydrolysable ester group; R^4 represents hydrogen or up to four substituents selected from alkyl, alkenyl, alkynyl, alkoxy, halogen, amino, alkylamino, acylamino, dialkylamino, CO_2R, $CONR_2$,

SO_2NR_2 (where R is hydrogen or C_{1-6} alkyl), aryl and heterocyclyl, which may be the same or different; X is S, SO, SO_2, O, or CH_2; and m is 1 or 2; and the dotted line indicates that the compounds (II) and (III) may be a 2-cephem or a 3-cephem system, and where in formula (III) the substituent(s) R^4 when other than hydrogen may replace any of the hydrogen atoms bonded to carbon atoms in the side chain,

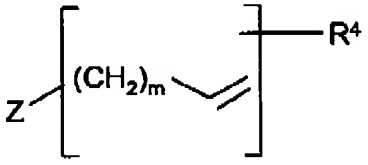
and, when R^3 is hydrogen optionally forming the carboxylate salt of said compound of formula III.

2. (Twice Amended) The process according to claim 1 wherein the compound of formula (II) is a 3-cephem of formula (IIA) or a pharmaceutically acceptable salt or pharmaceutically acceptable *in vivo* hydrolyzable ester thereof:



(IIA)

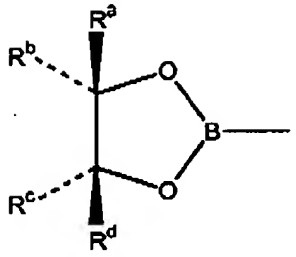
11. (Twice Amended) The process according to Claim 1 or 2, wherein the compound of formula III is prepared by coupling a compound of formula (IV) (as defined in claim 10) with an organometallic reagent or a compound having the structure (IX)



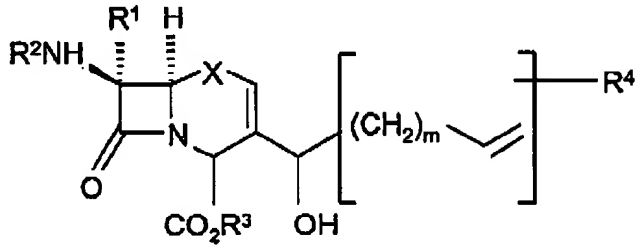
(IX)

wherein Z is boronate group (X)

D2



wherein R^a, R^b, R^c and R^d are independently selected from hydrogen, alkyl and protected carboxy to form a compound of formula (VIII):

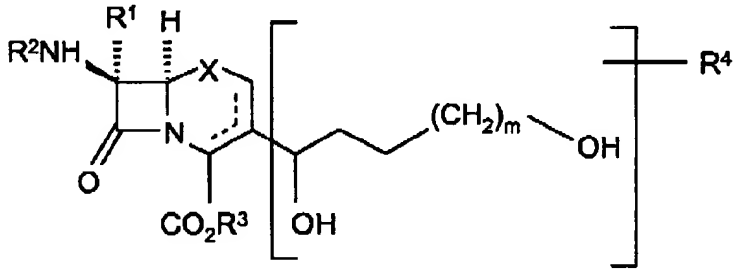


(VIII)

and wherein said compound of formula VIII is then hydroxylated to form a compound of formula III, where R^1, R^2, R^3, R^4, m, and X are as defined with respect to formula (III).

21. (Twice Amended) A compound of formula (III),

D3



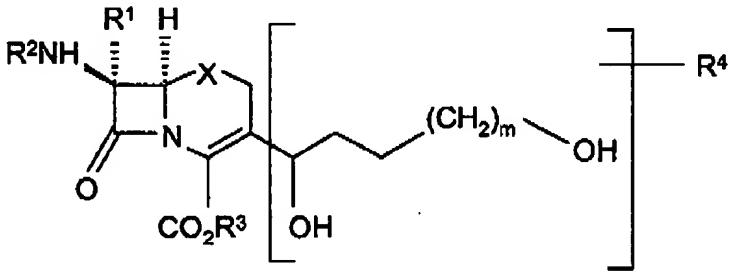
(III)

wherein R^1 is hydrogen, methoxy or formamido; R^2 is an acyl group; R^3 is hydrogen or a carboxy protecting group; R^4 represents hydrogen or up to four substituents selected from alkyl, alkenyl, alkynyl, alkoxy, halogen, amino, alkylamino, acylamino, dialkylamino, CO_2R, $CONR_2$, SO_2NR_2 (where R is hydrogen or C_{1-6} alkyl), aryl and heterocyclyl, which may be the same or different; X is S, SO, SO_2, O, or CH_2; and m is 1 or 2; and the dotted line indicates that the compound may be a 2-cephem or a 3-cephem system, and where the substituent(s) R^4 when other than hydrogen may

replace any of the hydrogen atoms bonded to carbon atoms in the side chain.

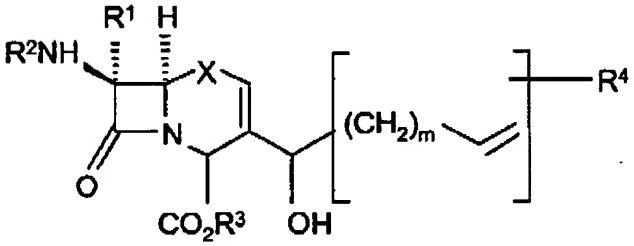
22. (Amended) The compound according to Claim 21, wherein the compound is a compound of formula IIIA

13



(IIIA)

23. (Amended) A compound of formula VIII,



(VIII)

wherein R^1 is hydrogen, methoxy or formamido; R^2 is an acyl group; CO_2R^3 is CO_2H, a carboxylate salt or a carboxy group protected by benzyl, p-methoxybenzyl, benzoylmethyl, p-nitrobenzyl, 4-pyridylmethyl, 2,2,2-trichloroethyl, 2,2,2-tribromoethyl, t-butyl, t-amyl, allyl, diphenylmethyl, triphenylmethyl, adamantyl, 2-benzyloxyphenyl, 4-methylthiophenyl, tetrahydrofur-2-yl, tetrahydropyran-2-yl, pentachlorophenyl, acetonyl, p-toluenesulphonylethyl, methoxymethyl, a silyl, stannyl or phosphorus-containing group, an oxime radical of formula $-N=CHR^7$ where R^7 is aryl or heterocyclic, or an *in vivo* hydrolysable ester group; R^4 represents hydrogen or up to four substituents selected from alkyl, alkenyl, alkynyl, alkoxy, halogen, amino, alkylamino, acylamino, dialkylamino, CO_2R, $CONR_2$, SO_2NR_2 (where R is hydrogen or C_{1-6} alkyl), aryl and heterocyclyl, which may be the same or different; X is S, SO, SO_2, O, or CH_2; and m is 1 or 2; and the dotted line indicates that the compounds (II) and (III) may be a 2-cephem or a 3-cephem system, and where in formula (III) the substituent(s) R^4 when other than hydrogen may replace any of the hydrogen atoms bonded to carbon atoms in the side chain.